

Michigan Rest Area Asset Management



2014 National Safety Rest Area Conference

Michigan System

65 Rest Areas

14 Welcome Centers

82 Roadside Parks



Michigan Rest Area Asset Management

2012 Research Report
provided a
Comprehensive
Quantitative Analysis of
Michigan Rest Areas &
Welcome Centers

Evaluating the Appropriate Level of Service for Michigan Rest Areas and Welcome Centers Considering Safety and Economic Factors

Executive Summary

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Michigan Rest Area Asset Management

Challenged to answer the questions:

- What is the current state of rest area system?
- What is the desired level of service?
- Which assets are critical to system performance?
- What investments are needed to meet performance goals?



Maintenance



Planning &
Statewide
Strategy



Scoping
Programming
Design

Asset Life Cycle



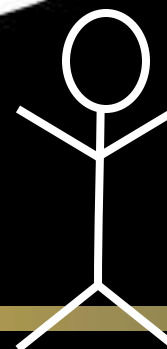
Inspection



Construction



Operation



Michigan Rest Area Asset Management

Rest Area Operations Team named to

- Align System Development & Operations
- Develop Data Dictionary & Metrics
 - Rest area inventories
 - Asset condition rating system
 - Asset performance attributes and criteria
 - Performance Targets
- Collaborate with the Road & Bridge and Facilities Call for Projects

Performance Analysis: Condition Rating System

Attribute:

- Building
- Utilities
- Pavement
- Site

Rating


1=Excellent/New

2=Good

3=Fair

4=Poor

5=Replace

 <div>Rest Area Inspection Guidelines</div>	
Building	
This item is to evaluate and rate the condition of the toilet building only. The inspector must note in the comment field on the Inspection Report whether fix options are recommended, feasible and cost effective in consideration of all condition issues noted during the inspection.	
Rating	Description
1	EXCELLENT/NEW CONDITION. <ul style="list-style-type: none">• New building with little wear RSL>75%• No noticeable or noteworthy deficiencies which affect the condition of the building.• Meets current standards and codes (ADA, ASHRAE, etc.)• Routine maintenance only
2	GOOD CONDITION. <ul style="list-style-type: none">• Building RSL 20+ years 74%>RSL>50%DSL• Minor deterioration & deficiencies• No appreciable maintenance required (based on work orders)• Meets most standards

Performance Analysis: Which attributes are critical?

Rest Area	Utility Condition	Overall Regulatory/ADA Compliance	Site Condition	Building Condition	Age of Building	Overall Pavement Condition (PASEF)	Rest Area Condition Rating	Rest Area Condition
IMPORTANCE RATING	4.50	2.75	3.00	3.75	2.25	2.50		
WEIGHTS	0.29	0.18	0.19	0.23	0.14	0.15		
Adair RA	1.12	0.36	0.27	0.34	0.14	0.30	2.53	GOOD
Alamo RA	0.83	0.55	0.58	0.64	0.27	0.45	3.33	FAIR
Alger RA	0.58	0.36	0.33	0.41	0.14	0.30	2.12	GOOD
Ann Arbor RA	0.58	0.36	0.54	0.46	0.14	0.45	2.52	GOOD
Battle Creek RA	0.58	0.55	0.52	0.72				
Bay City RA	0.58	0.36						
Belleville RA	0.58	0.36						
Big Rapids RA	1.09	0.55						
Cadillac RA	0.81	0.36						

Values extracted from Access Database

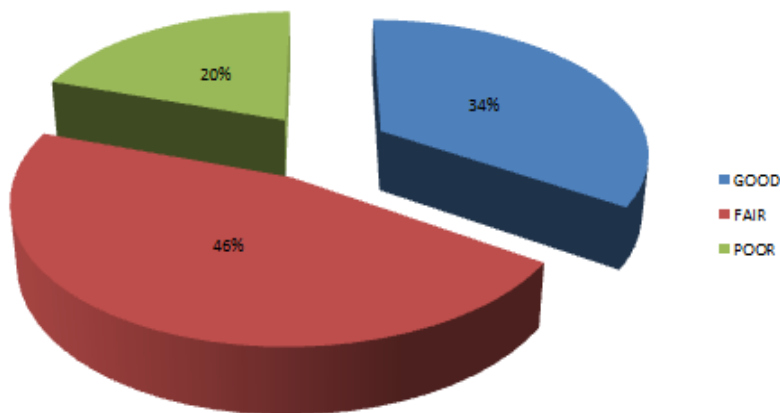
Combined weighted values = Attribute Condition Rating

Rest Area	Site	Building	Utility	Pavement	Overall
Adair RA	GOOD	GOOD	POOR	GOOD	GOOD
Alamo RA	FAIR	FAIR	FAIR	FAIR	FAIR
Alger RA	GOOD	GOOD	GOOD	GOOD	GOOD
Ann Arbor RA	FAIR	GOOD	GOOD	FAIR	GOOD
Battle Creek RA	FAIR	POOR	GOOD	FAIR	FAIR
Bay City RA	FAIR	FAIR	GOOD	GOOD	FAIR
Belleville RA	GOOD	GOOD	GOOD	GOOD	GOOD
Big Rapids RA	GOOD	FAIR	POOR	FAIR	POOR
Cadillac RA	FAIR	FAIR	FAIR	FAIR	FAIR

Performance Analysis: Current System Condition

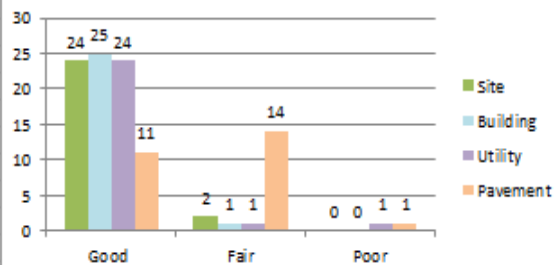
GOOD	26
FAIR	35
POOR	15

Statewide Rest Area System Overview

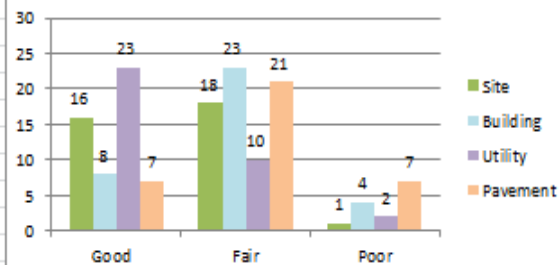


Rest Area System
Performance
80% Good-Fair
Condition

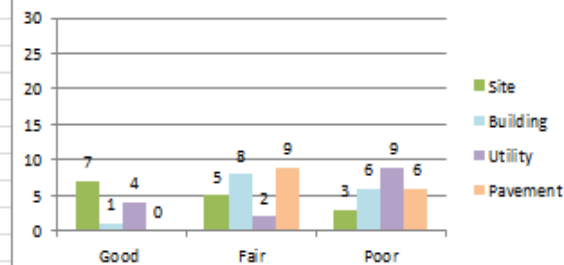
Overall Good Condition Rating



Overall Fair Condition Rating



Overall Poor Condition Rating



Performance Analysis: Level of Service

Level of Service Criteria for Rest Areas:

- Safety Benefits
- Demand & Utilization Characteristics
- Comfort & Convenience Benefits
- Tourism Benefits
- Commercial Vehicle Operator Safety
- Within AASHTO recommended spacing guidelines (1hour travel)

System Analysis Tools

Condition Sort by Attribute

UTILITY_POOR_SORT

Rest Area	Value Index Rank	Site	Building	Utility	Pavement	Overall	Comments	YEAR
Morley RA	14	GOOD	FAIR	POOR	FAIR	POOR	Rehab sanitary; total reconstruct	
Five Lakes RA	16	POOR	POOR	POOR	POOR	POOR	Total Reconstruct	
Woodbury Rd RA	23	FAIR	GOOD	POOR	POOR	POOR	Rehab pavement; rehab sanitary; misc. site improvements	
Big Rapids RA	29	GOOD	FAIR	POOR	FAIR	POOR	Rehab sanitary	
Powell RA	30	GOOD	GOOD	POOR	FAIR	FAIR	Rehab sanitary	2014
Rockford RA	49	GOOD	GOOD	POOR	FAIR	FAIR	Rehab sanitary	
Topinabee RA	52	GOOD	FAIR	POOR	FAIR	POOR	Rehab sanitary	
Gaylord RA	69	GOOD	POOR	POOR	FAIR	POOR	Total Reconstruct	
Hebron RA	70	GOOD	FAIR	POOR	FAIR	POOR	Rehab sanitary	
Houghton Lake RA	74	FAIR	FAIR	POOR	FAIR	POOR	Rehab sanitary	
Adair RA	75	GOOD	GOOD	POOR	GOOD	GOOD	Rehab sanitary	
Richmond RA	81	FAIR	POOR	POOR	POOR	POOR	CLOSE	

Tools to Select Investment Strategy

Attribute Fix/Cost Tables

FIX Category	FIX Type	Description of Work	Current Condition Rating	New Condition Rating	Scoping Cost Estimate	Risks & Limitations
R&R	Replace Steel Lift Station		4	1	\$100,000.00	None
CPM	Rehabilitate Steel Lift Station	Replace hatch cover, rails and pumps	3 or 4	2	\$80,000.00	
R&R	Replace Tile Field System		4, 5	1	\$200,000.00	
R&R	Replace Sand Filter System		4	1	\$175,000.00	
R&R	Replace Lagoon System		4	1	\$275,000.00	DEQ Permit
R&R	Rehabilitate Lagoon System	Remove sludge and Re-line existing lagoons	3,4	2	\$150,000.00	DEQ Permit
R&R	Replace Septic Tank			1	\$20,000.00	
R&R	Replace Force Main Sewer		4,5	1	\$40.00/Ft	
R&R	Replace Gravity Sewer		4,5	1	\$50.00/Ft	
R&R	Replace Well System	Preserve service; improve capacity or water quality	4,5	1	\$60,000.00	

Tools to Select Investment Strategy

Unfunded Projects Lists

REST AREA/WELCOME CENTER SEWAGE DISPOSAL SYSTEMS (as of 10/09/13)										
Name	Road_Ref	System Type	Lift Station	Pump Condition	Overall Lift Station Condition	Capacity to Meet EXISTING Demand/LOS	Lagoon or Drain Field Condition	Comments	Description of Work	Budget Estimate
Grand Region										
Rothbury RA	529-R	Septic	Yes	3	3	3	4	Replace valves	Rehab drain field; replace valves and controls	\$ 200,000.00
Hart RA	530-R	Septic	No	0	0	3	4		Rehab drain fields	\$ 200,000.00
Fruitport RA	502-R	Septic	Yes	3	3	2	4		Rehab drain fields	\$ 200,000.00
Rockford RA	525-R	Septic	Yes	3	4	2	4	Replace controls & sand filter media	Rehab sand filter; replace controls	\$ 200,000.00
Muskegon RA	501-R	Septic	Yes	3	3	2	4		Rehab fields; rehab lift station	
Morley RA	533-R	Septic	Yes	4	4	3	4		Rehab drain fields and replace lift station	\$ 300,000.00
Big Rapids RA	534-R	Septic	Yes	4	4	3	4		Rehab drain fields and replace lift station	\$ 300,000.00

System Performance Monitoring

System Condition Projections

Rest Area	Utility Condition	Overall Regulatory/ADA Compliance	Site Condition	Building Condition	Age of Building	Overall Pavement Condition (PASER)	Rest Area Condition Rating	Rest Area Condition	Number of Years Depreciated
Adair RA	1.18	0.36	0.28	0.35	0.14	0.31	2.62	GOOD	
Alamo RA	0.88	0.55	0.59	0.65	0.28	0.47	3.42	FAIR	GOOD
Alger RA	0.60	0.36	0.34	0.42	0.14	0.31	2.18	GOOD	FAIR
Ann Arbor RA	0.60	0.36	0.55	0.47	0.14	0.47	2.59	GOOD	POOR
Battle Creek RA	0.60	0.55	0.53	0.74	0.56	0.47	3.45	FAIR	Within 5% of POOR
Bay City RA	0.60	0.36	0.56	0.61	0.70	0.31	3.13	FAIR	
Belleville RA	0.60	0.36	0.34	0.42	0.14	0.31	2.18	GOOD	
Big Rapids RA	1.15	0.55	0.51	0.68	0.42	0.47	3.77	POOR	
Cadillac RA	0.85	0.36	0.59	0.64	0.28	0.47	3.18	FAIR	
Capac RA	0.60	0.55	0.60	0.72	0.42	0.62	3.51	POOR	

MiRest Area Next Steps: Go Global

- Rest area assets in the geo-referenced database
- MiRest Area Management Plan will be fully integrated with the proposed Enterprise Asset Management System (EAMS)
 - Close the loop on performance monitoring
 - Links to Traffic, Surveys, ROW maps etc.
 - Plan/capture/report activities
 - Locations
 - Costs
 - Work Type

MiRest Area Next Steps: Automation

- Mobile data collection app
- Enable staff to collect geo-referenced data:
 - Inventory
 - Condition
 - Images
 - Maintenance activity data
- Incorporates data collection into standard business practice

Questions?

Lynn Lynwood

Roadside Development Manager

September 30, 2014

National Safety Rest Area Conference

Asheville, North Carolina